

## REMARKS

In response to the Official Action mailed October 5, 2007, Applicant respectfully requests reconsideration, reexamination and allowance of claims 1-3, 5, 8 and 12-24 in view of the following amendments and remarks and the filing of the enclosed Request for Continued Examination. By this amendment, Applicant has amended claims 1, 5, 12, 13, 15 and 19 and has added claim 24 to more clearly define the present invention. Claims 4, 6, 7 and 9-11 have been cancelled to expedite the prosecution of the present application.

Claim 1 was amended to specify, more clearly, that coagulation is caused by the ultrasound beam emitted by the at least one planar ultrasound transducer. It was further amended by entering the features of claim 11 and by specifying more clearly the function of the channel; which is to transmit a partial vacuum for keeping the laparoscopy probe in place on an organ: see support in the description, p. 13, l. 8-17.

Claims dependent upon claim 1 were adapted or canceled in view of the amendment of claim 1 as necessary.

The other independent claims, that is claims 13, 15 and 19, were also amended to point out more clearly that coagulation is caused by an ultrasound beam emitted by the ultrasound transducer (similarly as in claim 1).

A new independent claim 24 was added. Claim 24 is based on previously-pending claim 1; however, claim 24 more specifically claims that coagulation is caused by the ultrasound beam emitted by the at least one planar ultrasound transducer. Further, Applicant has claimed that the transducer is provided without a membrane: for support of this claim, see embodiment of Fig. 23 and in particular p. 13, l.19-20.

### 1) Patentability of claim 1

Independent claim 1 corresponds now to previously-pending claim 11. The Office Action, in paragraph 6 objects to this claim under 35 USC §103 as being obvious based on Chopra in view of Pedersen. In particular, the Office Action notes that:

*...in view of Pedersen, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to replace Chopra probe*

*with containment chamber comprising a channel with partial vacuum in order to educe the movement of the tissue during the examination and transducing ultrasonic signals.*

However, Applicant respectfully notes that the reasoning of the Office Action is not correct.

- First, the invention of claim 1 differs from the disclosure of Chopra in that the invention relates to a laparoscopy probe. Chopra relates instead to an interstitial applicator. A laparoscopy probe and an interstitial applicator are different types of instruments. An interstitial applicator is for insertion into the tissue of the organ to be treated: see Chopra, c.1, l.43-44, c.2, l. 32-36, c.4, l.38-45, c.8, 45-47, c.9, 34-36, c.11, l.16-20, c.11, l.46-47. Whereas, a laparoscopy probe is not inserted into the tissue of the organ to be treated, but is placed nearby or in contact with surface of the organ to be treated. As a result, the invention of claim 1 is novel over Chopra if only for this reason, as the Office Action has clearly omitted to make the distinction between these two types of devices (see paragraph 3 of the Office action). As a consequence, the reasoning in the Office Action, about obviousness in paragraph 6 of the Office action, is not correct.

Indeed, Pedersen clearly does not deal with a laparoscopy probe, but with a scanner apparatus applied externally to the human body for breast cancer examination. As such, the combination of Chopra with Pedersen cannot result in a laparoscopy probe as none of these two references discloses a laparoscopy probe. As a result, the invention of claim 1 involves an inventive step over Chopra in view of Pedersen.

- Second, no person having ordinary skill in the art would attempt to add the channel claimed in claim 1 of the present invention, as now claimed, to the interstitial applicator of Chopra. Clearly, Chopra does not teach a channel that opens in the region of the transducer, adapted to transmit a partial vacuum for keeping the laparoscopy probe in place on an organ. This has already been recognized by the Office Action in paragraph 6. In fact, it does not make sense for one of ordinary skill to try to provide the possibility for the interstitial applicator of Chopra to be kept in place on an organ. Indeed, the interstitial applicator is for insertion into the tissue of the organ to be treated. As such, it is of no use to provide a possibility to maintain it on the organ. In other words, it is not a realistic problem that the one of ordinary skill in the art

would try to solve. As a result, the invention of claim 1 involves an inventive step over Chopra in view of Pedersen.

Further, Chopra does not mention that it is required or useful to keep the applicator in place during treatment. But assuming it is desired to keep it in place, there is no need to provide the interstitial applicator of Chopra with means for keeping it in place. In fact, the applicator of Chopra would be kept in place by the mere fact that the applicator is inserted into the tissue. In other words, the tissue of the organ surrounding the applicator keeps the applicator in place. This is different for a laparoscopy probe that is not inserted into the tissue of the organ, but placed onto the surface of the organ: in this case, it is helpful to provide means for keeping the laparoscopy probe in place. So, the invention of claim 1 also involves an inventive step over Chopra in view of Pedersen for this further reason. Furthermore, Chopra teaches against providing the possibility for the interstitial applicator of Chopra to be kept in place. Indeed, Chopra applies movement and/or motion(s) to the applicator during treatment: see c.11, l. 16-20. In other words, Chopra does not contemplate keeping the applicator in place during treatment. As such, there is no point in adding means for keeping it in place. The MPEP specifically states, at Section 2143.01:

**THE PROPOSED MODIFICATION CANNOT CHANGE  
THE PRINCIPLE OF OPERATION OF A REFERENCE**

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Therefore, the invention of claim 1 also involves an inventive step over Chopra in view of Pedersen for this further reason.

• Third, assuming nevertheless that the one of ordinary skill wishes to provide means for keeping the interstitial in place during treatment (although it is not the case as mentioned), it is very unlikely that she or he would have taken into consideration Pedersen. It seems that Applicant's previous argument in support of previously-pending claim 11, in reply to the first

Office action (see item 1 of the Office action), has not been given appropriate consideration. So, the arguments already submitted about Pedersen are also applicable when considering Chopra in view of Pedersen and thus should be reviewed again (see the submission of June 5, 2007, last paragraph of page 9 and page 10, incorporated herein by reference), i.e.:

- a) discussion about external device / laparoscopy involving entering into the body;
- b) difference of function of the vacuum: keeping probe in place on the organ in the invention vs. imaging probe revolving around the breast;
- c) impossibility of adapting Pedersen to Chopra as this requires bringing the entire apparatus of Pedersen into the body.

Regarding b), it is worth pointing out that in the present invention, the channel opens in the region of the transducer. When the probe is kept in place on the organ due to the suction effect of vacuum, the transducer remains precisely positioned with respect to the organ so that the ultrasound beam remains directed to the target in the organ despite possible movements of the organ due to e.g. breathing. In Pedersen, vacuum is provided through tubes 19, 20; however tubes 19, 20 do not open in the region of the (imaging) transducer 23, but instead are remote of it. Further, transducer 23 revolves with respect to tubes 19, 20; as such, Pedersen does not suggest at all to have a channel opening in the region of the transducer as claimed. Thus, the invention of claim 1 involves an inventive step for this further reason.

In fact, Pedersen is diametrically differently from the present invention. In the present invention, the channel for partial vacuum and the ultrasound transducer are associated so that the ultrasound beam of the transducer remains directed to the target in the organ to be treated. In Pedersen, vacuum is used to hold the organ with respect to the housing 1, but not with respect to the imaging transducer 23 itself.

Further, in Pedersen, the primary function of vacuum is not holding in place the breast, but raising the level of water 17 in the apparatus so as to completely cover the breast for providing ultrasound coupling between the ultrasound imaging probe and the breast: see c.5, l.17-49.

Combining Chopra with Pedersen would result in replacing revolving shaft 24 and

imaging transducer 23 by the interstitial applicator of Chopra and by adapting the size and shape of hole 10 to the organ to be treated inside of the body. As a result, the interstitial applicator would be located inside housing 1 of Pedersen with its vacuum channels 19, 20 and the collapsible bag 12 filled with water 17. The resulting apparatus would have to be inserted into the body so that adapted hole 10 of the housing would accommodate the internal organ to be treated. Then, vacuum would be applied through tubes 19, 20 in the same way as explained in Pedersen so as to raise water 17 around the organ and to hold the organ with respect to the organ. Needless to say, this combination does not correspond to the claimed laparoscopy probe. As such, the invention of claim 1 involves again an inventive step over Chopra in view of Pedersen for this additional reason. Further, a person having ordinary skill in the art would have disregarded Pedersen as the device resulting from the combination is not usable at all in practice as it is clear that such a device could not be inserted into the body.

For all of these reasons Applicant suggests that claim 1, as presently amended, is allowable.

## 2) Patentability of claim 13

The Office Action has rejected claim 13 under 35 USC 102(b) as being anticipated by Okada in paragraph 4. Applicant suggests that the construction of Okada by the Office Action is, respectfully, not correct. Indeed, the Office Action believes that clamping member 641 teaches a scalpel blade as claimed. However, this is not correct. As understood, a scalpel blade is designed for cutting tissue; the clamping member depicted as item 641 is not a scalpel blade. The clamping member 641 merely functions to clamp tissue. The fact that clamping member 641 is depicted with teeth on Fig. 79A does not change this as these teeth are only provided for enhancing the clamping effect. The teeth are not intended to provide cutting (which would go against the teachings of Okada). Thus, the invention of claim 13 is novel over Okada for this first reason.

Further, in claim 13, coagulation is caused by the ultrasound beam of the ultrasound transducer. This is not the case in Okada in which coagulation is due to frictional heat resulting from ultrasonic vibrations conveyed to a distal member that contacts the tissue: see e.g. Okada,

p. 28, middle of paragraph [0522]. Thus, the invention of claim 13 is also novel over Okada for this second reason.

Further, the cited reference does not suggest at all the apparatus of claim 13. As such, the Applicant respectfully believes that claim 13 is allowable.

### 3) Patentability of claims 15 and 19

The Office Action has rejected claims 15 and 19 under 35 USC 102(b) as being anticipated by Chopra in paragraph 3. However, Applicant respectfully suggests that the rejection is not correct. Each of claims 15 and 19, as now claimed, specifically recites that the coagulation instrument has a planar ultrasound coagulation transducer without membrane. In Chopra, there is always a membrane: see c.8, l.42-45 and c.9, l.3-4. The attention is drawn to the fact that figure 4 of Chopra seems to show an interstitial applicator without membrane. In fact, there is actually a membrane in figure 4 (reproduced by the Office action) which is shown at reference numeral 1; but it is almost not visible due to poor quality of reproduction. Thus, the inventions claimed in claims 15 and 19, as amended, are novel over Chopra.

Further, nothing in the cited references would lead a person having ordinary skill in the art to these disclosures in a way that would make the present invention obvious. Here again, it seems that the Office Action has respectfully not take into consideration Applicant's arguments in support of claims 15 and 19 in reply to the first Office action (see pages 10 and 11 of the submissions of June 5, 2007 and item 1 of the Office action incorporated herein as if set forth in full).

All these arguments made with respect to the Lafon reference apply in the same way to Chopra to support inventive step. As such, the Applicant believes that claims 15 and 19 are allowable.

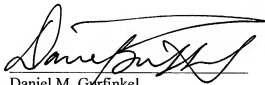
### 3) Patentability of claim 24

The invention of claim 24 is patentable for similar reasons as for claims 15 and 19 as none of the cited referenced, alone or in combination teaches using an ultrasound coagulation

transducer without membrane. As such Applicant believes that new claim 24 is allowable as well.

In view of the foregoing remarks and amendments, it is believed that the subject application is now in condition for allowance, and an early Notice of Allowance is respectfully requested. Applicant encloses herewith a Request for Continued Examination (RCE) and authorizes the Commissioner to charge the fee for the RCE to its attorney's deposit account (No. 23-0920). Applicant also encloses a petition for a one month extension of time and authorization to charge the petition fee to the above noted deposit account. It is believed that no other fee is needed, however, should it be determined that any fees are necessary the Commissioner is hereby authorized to charge any additional fee which may be required for this application under 37 C.F.R. §§ 1.16-1.18, including but not limited to the issue fee, or credit any overpayment, to Deposit Account No. 23-0920. Further, should any petition be required with respect to this reply and amendment, the Commissioner is respectfully requested to treat this paper as the necessary petition or petitions and to charge the petition fee(s) to the above noted deposit account.

Respectfully submitted

A handwritten signature in dark ink, appearing to read 'Daniel M. Gurfinkel', with a long horizontal flourish extending to the right.

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